

**Core High School Nature of Science
Standards, Supporting Skills, and Examples**

Indicator 1: Understand the nature and origin of scientific knowledge.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Evaluation)	<p>9-12.N.1.1. Students are able to evaluate a scientific discovery to determine and describe how societal, cultural, and personal beliefs influence scientific investigations and interpretations.</p> <p>Examples: telescope, birth control pill, penicillin, electricity</p> <ul style="list-style-type: none"> • Recognize scientific knowledge is not merely a set of static facts but is dynamic and affords the best current explanations. <p>Examples: spontaneous generation, relativity, geologic time</p> <ul style="list-style-type: none"> • Discuss how progress in science can be affected by social issues.
(Synthesis)	<p>9-12.N.1.2. Students are able to describe the role of observation and evidence in the development and modification of hypotheses, theories, and laws.</p> <ul style="list-style-type: none"> • Research, communicate, and support a scientific argument. • Recognize and analyze alternative explanations and models. • Evaluate the scientific accuracy of information relevant to a specific issue (pseudo-science).

Indicator 2: Apply the skills necessary to conduct scientific investigations.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Synthesis)	<p>9-12.N.2.1. Students are able to apply science process skills to design and conduct student investigations.</p> <ul style="list-style-type: none">• Identify the questions and concepts to guide the development of hypotheses.• Analyze primary sources of information to guide the development of the procedure.• Select and use appropriate instruments to extend observations and measurements.• Revise explanations and models based on evidence and logic.• Use technology and mathematic skills to enhance investigations, communicate results, and defend conclusions. <p>Examples:</p> <p>Computer-based data collection</p> <p>Graphical analysis and representation</p> <p>Use appropriate technology to display data (i.e. spreadsheets, PowerPoint, web).</p>
(Application)	<p>9-12.N.2.2. Students are able to practice safe and effective laboratory techniques.</p> <ul style="list-style-type: none">• Handle hazardous materials properly.• Use safety equipment correctly.• Practice emergency procedure.• Wear appropriate attire.• Practice safe behaviors.

**Core High School Nature of Science
Performance Descriptors**

Advanced	High school students performing at the advanced level: <ul style="list-style-type: none"> • given a scientific discovery, evaluate how different societal, cultural, and personal beliefs influenced the investigation and its interpretation; • design and conduct an investigation using an alternative student- developed hypothesis.
Proficient	High school students performing at the proficient level: <ul style="list-style-type: none"> • given a scientific discovery narrative, determine and describe how societal, cultural, and personal beliefs influenced the investigation and its interpretation; • describe the role of observation and evidence in the development and modification of hypotheses, theories, and laws; then apply science process skills to design and conduct student investigations.
Basic	High school students performing at the basic level: <ul style="list-style-type: none"> • describe the role of observation in the development of hypotheses, theories, and laws and conduct student investigations; • given a scientific discovery narrative, identify the cultural and personal beliefs that influenced the investigation.

**Core High School Nature of Science
ELL Performance Descriptors**

Proficient	High school ELL students performing at the proficient level: <ul style="list-style-type: none"> • describe the role of observation in the development of hypotheses; • conduct student investigations.
Intermediate	High school ELL students performing at the intermediate level: <ul style="list-style-type: none"> • identify the role of observation in the development of hypotheses; • participate in student investigations with peers.
Basic	High school ELL students performing at the basic level: <ul style="list-style-type: none"> • use observations to collect data; • observe student investigations with peers; • respond correctly to yes or no questions on topics presented in class.
Emergent	High school ELL students performing at the emergent level: <ul style="list-style-type: none"> • use correct pronunciation of science words; • use non-verbal communication to express scientific ideas.

Pre-emergent	High school ELL students performing at the pre-emergent level: <ul style="list-style-type: none">• observe and model appropriate cultural and learning behaviors from peers and adults;• listen to and observe comprehensible instruction and communicate understanding non-verbally.
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